

United States Embassy Lisbon Green Embassy Program Friday, April 16, 2010



As the largest consumer of energy in the U.S. economy, the Federal government can and should lead by example when it comes to creating innovative ways to reduce greenhouse gas emissions, increase energy efficiency, conserve water, reduce waste, and use environmentally-responsible products and technologies.

President Barack Obama



Climate change is one of the greatest twenty-first century global challenges. Tackling it requires U.S. leadership in a partnership of nations committed to reducing carbon production, and effective leadership requires that we practice what we preach. Our potential partners will judge us by our facilities, vehicles, and business practices. I welcome the initiatives you have each taken in our embassy facilities to show such leadership.

Secretary of State Hillary R. Clinton



THE LEAGUE OF GREEN U.S. EMBASSIES

Founded in Fall 2007 – Currently 35 Embassies

Collectively our Embassies are a powerful force for introducing innovative solutions, influencing individuals and institutions in our host countries, and demonstrating U.S. resolve and leadership.



Members of the Green League pledge to:

- Encourage personal actions that will lead to reductions in greenhouse gas emissions;
- Reduce energy usage at our Embassies 30 percent by 2015;
- Recycling programs ;
- Energy conservation program;
- Seek additional funding for the Energy Conservation and Sustainable Design;
- Share ideas and cooperate with our counterparts.





LEAF Lisbon
Eco-friendly
Action
Forum

THE LEAF PROGRAM

Goals: Reduce consumption
Increase recycling
Reuse products made from recycled materials and
Reduce the embassy's carbon footprint.



LEAF Program Initiatives to Date



Recycling containers around Embassy and in each office



Reserved Parking Under The Carpool Program



Purchased New, More Fuel-Efficient Cars



Solar Panels & Photo-Voltaic Panels



Currently Replacing HVAC System With Energy-Efficient Magnetic Levitation & Heat Replacement Chillers



Solar Reflective Window Film



Electricity Saving Initiatives



CFL Bulbs Indoors and Out



Motion Sensors & CFL Lights In Every Room and Office



Electricity Consumption and Cost

2006–07: 4,938,835 KWH at a cost of €421,344

2008–09: 4,488,868 KWH at a cost of €391,739

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Reduction of 9.1% in usage and a 7.0% in cost

Savings to date of €29,572

Carbon footprint reduction of 185 tons



Water Reduction Initiatives

- Repaired pumps in the storage tanks.
- Repaired leaks in the sprinkler systems.
- Compound is watered less and more efficiently in the early mornings or late afternoons, but never in the middle of the day or when it is raining.
- Installed a humidity detector device in the garden sprinkle system.
- Installed low-flow shower heads.



Humidity Detectors on the Back Garden Sprinkler System



Water Consumption & Cost

2006-07: used 49,936 cm³ of water at a cost €104,594.

2008-09: used 40,813 cm³ of water at a cost of €91,908.

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Decrease in water usage of 9,123 cm³ and €12,686 in costs.

Reduction of about 18.3% in consumption and 12.1% in cost, even as the average cm³ of water increased from €2.15 to €2.30.



Diesel Fuel Reduction Initiatives

- Replaced the 25 year-old boiler with two new energy-efficient and independent boilers in Dec 2008.
- Reduced heating from 76 to 72F (22C) in the Winter.
- Removed the Annex generator and consolidated the electrical requirements under the Embassy generator power grid.



Diesel Fuel Consumption & Cost

2006-07 used 85,000 liters at a cost of €53,679

2008-09 used 57,000 liters at a cost of €22,869

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Savings of €30,810 and reduction of 28,000 liters of diesel.

This calculates to a CO² reduction of 81.2 tons.



Five Vehicles Replaced (June 09)

- June 08 – February 09 - old vehicles, 30,533 km and 4,188 liters of gas.
- June 09-February 10 - new vehicles , 40,368 km and 3,781 liters of diesel.
- 32.7% increase in km driven, 9.7% less gas used at 17% lower cost.



Reduction in Carbon Footprint

With all factors considered, we calculate that the Embassy has reduced its carbon footprint by about **269 tons** during the 2008-2009 period.



Lessons Learned

- Immediate reductions and savings can be achieved with minimal investment - picking the low hanging fruit.
- Large infrastructure projects call for major investments – picking the high hanging fruit.
- Extreme weather conditions impact electricity, diesel and water usage.
- Changing behavior requires a lot of coaching, information sharing, patience, practice and repetition.
- An effective green program requires Senior Management support and wide employee participation.



What's Next?

- Continued replacement of automobile fleet with more fuel efficient or hybrid vehicles
- Install humidity detectors in the front sprinkler system.
- Purchase only Energy Star Appliances
- Install CFL lights in homes - 5 most-used rooms
- Expand procurement of recycled products
- New Magnetic Levitation Chiller and Heat - will provide significant decrease in electric and diesel use
- Replace and expand photo-voltaic solar panels
- Replace part of grass area with a sustainable landscape

Your next great idea!



Questions?

